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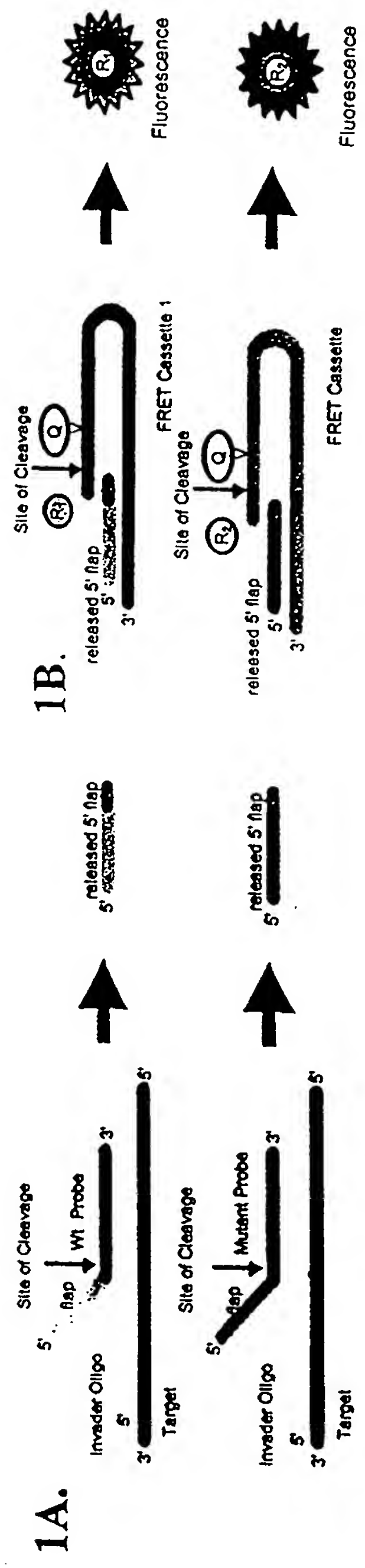
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FIGURE 1

"Replacement Sheet"



## "Replacement Sheet"

### FIGURE 2

## Automated primer selection for multiplex PCR using *Invader™ Creator Primer Designer v 1.3.3*

Multiplex PCR commonly requires extensive optimization to avoid biased amplification of select amplicons and the amplification of spurious products resulting from the formation of primer-dimers. In order to avoid these problems, we have designed *Invader™ Creator Primer Designer v1.3.3* software for the automated selection of multiplex primers. Beginning with a set of user defined sequences and corresponding SNP locations, *Invader™ Creator Primer Designer* defines an "Invader™ footprint" (the minimal amplicon required for Invader™ detection) for each sequence. Primers are designed outward from the "Invader™ footprint" and evaluated against several criteria, including the potential for primer-dimer formation with previously designed primers in the current multiplexing set. *Invader™ Creator Primer Designer* continues through multiple iterations of the same set of sequences until primers against all sequences in the current multiplexing set can be designed.

### 2A. (SEQ ID NO:263)

29043, FM01, aagttagaagaaccaagactatcttgtcaggggtgtatTTTTGAGAGTGGCAGACTTTTCAGTGCCT  
ttccattcatgacacttcttgaatctctggcagaaccagccagccgtgttcacagtgtcaaataagggatgtcttt  
gattgcttccaggtgttcctcagcaccaccggagggggatgggtgatcagccgaatctttgactcgggctacccatg  
ggacatggtgttcatgacacgctttcagaacatgttgagaaattccctcccaac[ct]ccaattgtgacttggttga  
tggagcgaaagataaacaactggctcaatcatgcaaattacggcttaataaccagaagacaggtaaatataatgtgac  
tgccaagggcttttaggaagaaggagcctctgcctgtccagcagcctatacaagccaggcagtaccacagcaacatg  
gctgaatgtgtgggaacacttgatacaaatttgcttgataataacagctaactgttcttaagtactcagaaagtga  
attatgtatttc

### 2B. (SEQ ID NO:263)

29043, FM01, aagttagaagaaccaagactatcttgtcaggggtgtatTTTTGAGAGTGGCAGACTTTTCAGTGCCT  
ttccattcatgacacttcttgaatctctggcagaaccagccagccgtgttcacagtgtcaaataagggatgtcttt  
gattgcttccaggtgttcctcagcaccaccggagggggatgggtgatcagccgaatctttgact**cgggctacccatg**  
**ggacatggtgttCATGACACGCTTTCAGAACATGTTGAGAAATTCCTCCCAAC**[ct]CCAATTGTGACTTGGTTGA  
TGGAGCGAAAGATAAACAACCTGGctcaatcatgcaaattacggcttaataaccagaagacaggtaaatataatgtgac  
tgccaagggcttttaggaagaaggagcctctgcctgtccagcagcctatacaagccaggcagtaccacagcaacatg  
gctgaatgtgtgggaacacttgatacaaatttgcttgataataacagctaactgttcttaagtactcagaaagtga  
attatgtatttc

f, **cgggctacccatgggaca**, 59.38 (SEQ ID NO:333)

r, **tctggattaagccgtaatttgcattgattga**, 60 (SEQ ID NO:334)

Figure 2. Creation of 101 primer sets from sequences available for analysis on the *Invader™ Medically Associated Panel* using *Invader™ Creator Primer Designer v 1.3.3*. (A) Sample input file of a single entry. Information includes TWT SNP#, short name identifier, and sequence with the SNP location indicated in brackets. (B) Sample output file of the same entry. Information includes the sequence of the "Invader footprint" (capital letters flanking SNP site), forward and reverse primer sequences (bold), and their corresponding Tm's.



## “Replacement Sheet”

# Figure 5A

CYP2D6 PCR amplification:

Primers:

Triplex PCR protocol

Exons 1 & 2 (2036 nt)

2D6L1F1: 5' – CTGGGCTGGGAGCAGCCTC – 3' (SEQ ID NO:335)

2D6L1R1: 5' – CACTCGCTGGCCTGTTTCATGTC – 3' (SEQ ID NO:336)

Exons 3, 4, 5, & 6 (1683 nt)

2D6L2F: 5' – CTGGAATCCGGTGTCTGAAGTGG – 3' (SEQ ID NO:337)

2D6L2R2: 5' – CTCGGCCCCTGCACTGTTTC – 3' (SEQ ID NO:338)

Exons 7, 8, & 9 (1754 nt)

2D6L3F: 5' – GAGGCAAGAAGGAGTGTCAGGG – 3' (SEQ ID NO:339)

2D6L3R5B: 5' – AGTCCTGTGGTGAGGTGACGAGG – 3' (SEQ ID NO:340)

Monoplex PCR protocol

CYP2D6 nucleotides 506 – 856 (\*10 & \*21)

forward (1221-09-01): 5' – ggtagtgaggcaggt – 3' (SEQ ID NO:341)

reverse (1221-09-02): 5' – gcttctggtaggggag – 3' (SEQ ID NO:342)

CYP2D6 nucleotides 1335 – 1616 (\*11 & \*17)

forward (1221-09-03): 5' – aaataggactaggacctgt – 3' (SEQ ID NO:343)

reverse (1221-09-04): 5' – ggggtccacggaaat – 3' (SEQ ID NO:344)

CYP2D6 nucleotides 2092 – 2582 (\*4, \*6 & \*37)

forward (1221-09-05): 5' – catggccacgcg – 3' (SEQ ID NO:345)

reverse (1221-09-06): 5' – ccggcacctctcg – 3' (SEQ ID NO:346)

CYP2D6 nucleotides 2977 – 3146 (\*3 & \*33)

forward (1221-09-07): 5' – ccgtcctcctgcat – 3' (SEQ ID NO:347)

reverse (1221-09-08): 5' – cactctcaccttctcca – 3' (SEQ ID NO:348)



**“Replacement Sheet”**

**Figure 5B**

CYP2D6 nucleotides 3294 – 3494 (\*2 R296C & \*7)

forward (1221-09-09): 5' – gttctgtcccgagtatg –3' (SEQ ID NO:349)

reverse (1221-09-10): 5' – tgcactgtttcccaga – 3' (SEQ ID NO:350)

CYP2D6 nucleotides 3589 – 3918 (\*25, \*26 & \*29)

forward (1221-09-11): 5' – ctgacctcctccaacat –3' (SEQ ID NO:351)

reverse (1221-09-12): 5' – gggctatcaccaggt – 3' (SEQ ID NO:352)

CYP2D6 nucleotides 4316 – 5226 (\*2, \*27, \*31 & \*32)

forward (1221-09-13): 5' – ctgacctcctccaacat –3' (SEQ ID NO:353)

reverse (1221-09-15): 5' – gggctatcaccaggt – 3' (SEQ ID NO:354)

FIGURE 14

Primer Name	Sequence	Size	Oligo TM	Amplicon Size
primer pair 1	AAG GCT TTG CAG GCT TCA (SEQ ID NO:355)	18 bases	64.3	1460 bp
primer pair 1	GCT CGG ACT ACG GTC ATC A (SEQ ID NO:356)	19 bases	65.3	
primer pair 2	TGG AAT CCG GTG TCG AAG (SEQ ID NO:357)	18 bases	63.4	942 bp
primer pair 2	GAA ATC TCT GAC GTG GAT AG (SEQ ID NO:358)	20 bases	58.8	
primer pair 3	GTA CCT CCT ATC CAC GTC A (SEQ ID NO:359)	19 bases	61.7	866 bp
primer pair 3	CAC TCC TTC TTG CCT CCT A (SEQ ID NO:360)	19 bases	62.2	
primer pair 4	GCA AGA AGG AGT GTC AGG G (SEQ ID NO:361)	19 bases	64.1	1748 bp
primer pair 4	CTG TGG TGA GGT GAC GAG G (SEQ ID NO:362)	19 bases	66.1	



"Replacement Sheet"

## "Replacement Sheet"

**FIGURE 15**

SNP Name	Nucleotide position/ change	Oligo Type	Dye	Poly- morphism	Assay Oligo Sequence
CYP2D6 S486T	4180G>C	Invader	NONE		GCCACCATGGTGCTTTGCTTCCTGGTGAT (SEQ ID NO:363)
CYP2D6 S486T	4180G>C	Probe	FAM	C	CGCGCCGAGGCCCATCCCCCTATGV (SEQ ID NO:364)
CYP2D6 S486T	4180G>C	Probe	RED	G	ACGACGCGGAGGCCCATCCCCTATV (SEQ ID NO:365)
CYP2D6 S486T	4180G>C	Target	FAM	C	AGCTCATAGGGGGATGGGTACACAGAAAGCAACACCATTGGTGGCTG (SEQ ID NO:366)
CYP2D6 S486T	4180G>C	Target	RED	G	AGCTCATAGGGGGATGGGTACACAGAAAGCAACACCATTGGTGGCTG (SEQ ID NO:367)
CYP2D6 1846G>A	1846G>A	Invader	NONE		CCTTACCCGCATCTCCACCCCAT (SEQ ID NO:368)
CYP2D6 1846G>A	1846G>A	Probe	FAM	A	CGCGCCGAGGAGCGCCCTTTTCGV (SEQ ID NO:369)
CYP2D6 1846G>A	1846G>A	Probe	RED	G	ACGACGCGGAGGAGCGCCCTTTTCV (SEQ ID NO:370)
CYP2D6 1846G>A	1846G>A	Target	FAM	A	GGGCGAAAGGGCGCTTGGGGTGGGAGATCGGGTAAGGG (SEQ ID NO:371)
CYP2D6 1846G>A	1846G>A	Target	RED	G	GGGCGAAAGGGCGCTCTGGGGTGGGAGATCGGGTAAGGG (SEQ ID NO:372)
CYP2D6 H324P	2935A>C	Invader	NONE		GGGCTACGCTGCACATCCGGAC (SEQ ID NO:373)
CYP2D6 H324P	2935A>C	Probe	FAM	A	CGCGCGAGGTGTAGGATCATGACAGGV (SEQ ID NO:374)
CYP2D6 H324P	2935A>C	Probe	RED	C	ACGGACGCGAGGGTAGGATCATGACAGV (SEQ ID NO:375)
CYP2D6 H324P	2935A>C	Target	FAM	A	GCCTCTGCTCATGATCTACATCCGGATGTGCAGCGTGAGCCCAT (SEQ ID NO:376)
CYP2D6 H324P	2935A>C	Target	RED	C	GCCTCTGCTCATGATCTACCTCCGGATGTGCAGCGTGAGCCCAT (SEQ ID NO:377)
CYP2D6 P34S	100C>T	Invader	NONE		GCAGTGGCAGGGGGCTGGTGT (SEQ ID NO:378)
CYP2D6 P34S	100C>T	Probe	RED	C	ACGGACGCGAGGGTAGCTGCAGCV (SEQ ID NO:379)
CYP2D6 P34S	100C>T	Probe	FAM	T	CGCGCGAGGATAGCTGCAGCCV (SEQ ID NO:380)
CYP2D6 P34S	100C>T	Target	RED	C	GCTGGCTGCACGCTACCCACACAGGCCCTGCCACTGCC (SEQ ID NO:381)
CYP2D6 P34S	100C>T	Target	FAM	T	GCTGGCTGCACGCTACTACACAGGCCCTGCCACTGCC (SEQ ID NO:382)
CYP2D6 883G>C	883G>C	Invader	NONE		AGGCCCTGACCCCTCCCTCTGCAT (SEQ ID NO:383)
CYP2D6 883G>C	883G>C	Probe	FAM	G	CGCGCCGAGGGTTGCGGCGCCV (SEQ ID NO:384)
CYP2D6 883G>C	883G>C	Probe	RED	C	ACGGACGCGAGCTTGCAGCGCCV (SEQ ID NO:385)
CYP2D6 883G>C	883G>C	Target	FAM	G	AAGCGGCGCGCAACTGCAGAGGGGTACAGGCTCT (SEQ ID NO:386)
CYP2D6 883G>C	883G>C	Target	RED	C	AAGCGGCGCGCAAGTGCAGAGGGGTACAGGCTCT (SEQ ID NO:387)
CYP2D6 1661G>C	1661G>C	Invader	NONE		GCAGCAGAGGGCTTCTCCGT (SEQ ID NO:388)
CYP2D6 1661G>C	1661G>C	Probe	FAM	G	CGCGCCGAGGGTCCACTTGCVCV (SEQ ID NO:389)
CYP2D6 1661G>C	1661G>C	Probe	RED	C	ACGGACGCGAGCTCCACTTGCVCV (SEQ ID NO:390)
CYP2D6 1661G>C	1661G>C	Target	FAM	G	AGTTGCGAAGGTGGACACGGAAGCGCTCTGCTCGCG (SEQ ID NO:391)
CYP2D6 1661G>C	1661G>C	Target	RED	C	AGTTGCGAAGGTGGAGACGGAAGCGCTCTGCTCGCG (SEQ ID NO:392)
CYP2D6 L421P	3887T>C	Invader	NONE		GCCTCACAAAGTGGCCCTGGGCATCCT (SEQ ID NO:393)
CYP2D6 L421P	3887T>C	Probe	FAM	T	CGCGCCGAGGAGGAGTGTTCGGGV (SEQ ID NO:394)
CYP2D6 L421P	3887T>C	Probe	RED	C	ACGGACGCGAGGAGGAGTGTTCGGGV (SEQ ID NO:395)
CYP2D6 L421P	3887T>C	Target	FAM	T	TCCACCCGGAACACTTCTCTGGATGCCCAGGGCCACTTGTGAAGCCG (SEQ ID NO:396)
CYP2D6 L421P	3887T>C	Target	RED	C	TCCACCCGGAACACTTCTCTGGATGCCCAGGGCCACTTGTGAAGCCG (SEQ ID NO:397)
CYP2D6 T107I	1023C>T	Invader	NONE		CGCCCGCTGTGCCCCATAA (SEQ ID NO:398)
CYP2D6 T107I	1023C>T	Probe	FAM	C	CGCGCCGAGGCCAGATCTGGGTV (SEQ ID NO:399)
CYP2D6 T107I	1023C>T	Probe	RED	T	ACGGACGCGAGGTCCAGATCTGGGTTTV (SEQ ID NO:400)
CYP2D6 T107I	1023C>T	Target	FAM	C	GCCRAAACCCAGGATCTGGGTATGGGCACAGCGGGCGGT (SEQ ID NO:401)
CYP2D6 T107I	1023C>T	Target	RED	T	GCCRAAACCCAGGATCTGGGTATGGGCACAGCGGGCGGT (SEQ ID NO:402)
CYP2D6 1973[Gins]	1973[insG]	Invader	NONE		CAGGCTGCTGGACCTAGTCTCAGGAGGT (SEQ ID NO:403)
CYP2D6 1973[Gins]	1973[insG]	Probe	RED	INS	acgagcgcggaggGATCGAAGGAGGAGT (SEQ ID NO:404)
CYP2D6 1973[Gins]	1973[insG]	Probe	FAM	DEL	CGCGCCGAGGAGTGAAGGAGGAGTCGV (SEQ ID NO:405)
CYP2D6 1973[Gins]	1973[insG]	Target	RED	INS	CCCGACTCTCTTCGATCCCTCTGAGCTAGGTCCAGCAGCTGAGT (SEQ ID NO:406)
CYP2D6 1973[Gins]	1973[insG]	Target	FAM	DEL	AGCCCGACTCTCTTTCAGTCCCTCTGAGCTAGGTCCAGCAGCTGAG (SEQ ID NO:407)
CYP2D6 3259insGT	3259insGT	Invader	NONE		GCCCTACACCACTGCCGCTGATTCATGAGGC (SEQ ID NO:408)
CYP2D6 3259insGT	3259insGT	Probe	FAM	INS	CGCGCCGAGGTGTGACGCGCTTTGV (SEQ ID NO:409)
CYP2D6 3259insGT	3259insGT	Probe	RED	DEL	ACGGACGCGGAGTGACGCGCTTTGGV (SEQ ID NO:410)



## "Replacement Sheet"

**FIGURE 15**

SNP Name	Nucleotide position/ change	Oligo Type	Dye	Poly- morphism	Assay Oligo Sequence
CYP2D6 3259insGT	3259insGT	Target	FAM	INS	TGTCCCAAAAGCGCTGCACACCTCATGAATCAGGCGAGTGGTGTAGGGCAT (SEQ ID NO:411)
CYP2D6 3259insGT	3259insGT	Target	RED	DEL	TGTCCCAAAAGCGCTGCACCTCATGAATCAGGCGAGTGGTGTAGGGCAT (SEQ ID NO:412)
CYP2D6 E410K	3853G>A	Invader	NONE		CATGRTGCTGAAGGATGAGGCGTCTGGT (SEQ ID NO:413)
CYP2D6 E410K	3853G>A	Probe	RED	G	ACGGACGGGAGGAGAAAGCCCTCCGV (SEQ ID NO:414)
CYP2D6 E410K	3853G>A	Probe	FAM	A	CGCGCCGAGGAAGAAAGCCCTCCGV (SEQ ID NO:415)
CYP2D6 E410K	3853G>A	Target	RED	G	GGAAGCGGAAGGGCTTCTCCAGAGGGCTCATCTTCAGCACYGATGAC (SEQ ID NO:416)
CYP2D6 E410K	3853G>A	Target	FAM	A	GGAAGCGGAAGGGCTTCTCCAGAGGGCTCATCTTCAGCACYGATGAC (SEQ ID NO:417)
CYP2D6 G42R	124G>A	Invader	NONE		GGCCCCCTGCCACTGCCCT (SEQ ID NO:418)
CYP2D6 G42R	124G>A	Probe	RED	G	ACGGACGGGAGGGGCTGGGCAACV (SEQ ID NO:419)
CYP2D6 G42R	124G>A	Probe	FAM	A	CGCGCCGAGGAGGCTGGGCAACV (SEQ ID NO:420)
CYP2D6 G42R	124G>A	Target	RED	G	AGCAGGTTGCCAGCCCGGCGAGTGGCAGGGGGCTG (SEQ ID NO:421)
CYP2D6 G42R	124G>A	Target	FAM	A	AGCAGGTTGCCAGCCCTGGCAGTGGCAGGGGGCTG (SEQ ID NO:422)
CYP2D6 R201H	1943G>A	Invader	NONE		CGCCGCTTCGAGTACGACGACCCCTCT (SEQ ID NO:423)
CYP2D6 R201H	1943G>A	Probe	FAM	G	CGCGCCGAGGGCTTCTCAGGCTGV (SEQ ID NO:424)
CYP2D6 R201H	1943G>A	Probe	RED	A	ACGACGCGGAGACTTCTCAGGCTGV (SEQ ID NO:425)
CYP2D6 R201H	1943G>A	Target	FAM	G	TCCAGCAGCCTGAGGAAGCGAGGGTGTGCTACTCGAAGCGGGGCC (SEQ ID NO:426)
CYP2D6 R201H	1943G>A	Target	RED	A	TCCAGCAGCCTGAGGAAGTGGGGTGTGCTACTCGAAGCGGGGCC (SEQ ID NO:427)
CYP2D6 R440H	4042G>A	Invader	NONE		CCCTCCCTCCCCACAGGCCT (SEQ ID NO:428)
CYP2D6 R440H	4042G>A	Probe	FAM	G	CGCGCCGAGGGCGTGCATGCCV (SEQ ID NO:429)
CYP2D6 R440H	4042G>A	Probe	RED	A	ACGACGCGGAGACCCTGCATGCCV (SEQ ID NO:430)
CYP2D6 R440H	4042G>A	Target	FAM	G	CCGAGGCATGCACGGCGGCTGTGGGAGGGGAGGGC (SEQ ID NO:431)
CYP2D6 R440H	4042G>A	Target	RED	A	CCGAGGCATGCACGGTGGCCTGTGGGAGGGGAGGGC (SEQ ID NO:432)
CYP2D6 V11M	31G>A	Invader	NONE		AGAAGCACTGGTCCCCCTGGCCT (SEQ ID NO:433)
CYP2D6 V11M	31G>A	Probe	FAM	G	CGCGCCGAGGTGATAGTGCCATCTCV (SEQ ID NO:434)
CYP2D6 V11M	31G>A	Probe	RED	A	ACGACGCGGAGATGATAGTGCCATCTCV (SEQ ID NO:435)
CYP2D6 V11M	31G>A	Target	FAM	G	GCAGGAAGATGGCCACTATCAGCGCCAGGGGACCAGTCTCTAG (SEQ ID NO:436)
CYP2D6 V11M	31G>A	Target	RED	A	GCAGGAAGATGGCCACTATATGCGCCAGGGGACCAGTCTCTAG (SEQ ID NO:437)
CYP2D6 V338M	3183G>A	Invader	NONE		GGCCGTGTCCAAACAGGAGATCGACGACT (SEQ ID NO:438)
CYP2D6 V338M	3183G>A	Probe	RED	G	ACGACGCGGAGGTGATAGGCGAGGTG (SEQ ID NO:439)
CYP2D6 V338M	3183G>A	Probe	FAM	A	CGCGCCGAGGATGATAGGCGAGGTGCV (SEQ ID NO:440)
CYP2D6 V338M	3183G>A	Target	RED	G	CGCCGACCTGCCCTATCAGTCGTCGATCTCTGTTGGACACGGGCTG (SEQ ID NO:441)
CYP2D6 V338M	3183G>A	Target	FAM	A	CGCCGACCTGCCCTATCATGTCGTCGATCTCTGTTGGACACGGGCTG (SEQ ID NO:442)
CYP2D6 V7M	19G>A	Invader	NONE		TGGCCACTATCAYGGCCAGGGGCAA (SEQ ID NO:443)
CYP2D6 V7M	19G>A	Probe	RED	G	ACGACGCGGAGCCAGTGTCTAGCCV (SEQ ID NO:444)
CYP2D6 V7M	19G>A	Probe	FAM	A	CGCGCCGAGTCACTGCTAGCCV (SEQ ID NO:445)
CYP2D6 V7M	19G>A	Target	RED	G	TATGGGCTAGAAGCACTGTGCCCCCTGGCCRTGATGTGCCATC (SEQ ID NO:446)
CYP2D6 V7M	19G>A	Target	FAM	A	TATGGGCTAGAAGCACTGTGCCCCCTGGCCRTGATGTGCCATC (SEQ ID NO:447)
CYP2D6 2549A>del		Invader	NONE		GCTGGGCTGGTCCCAGGTCTCT (SEQ ID NO:448)
CYP2D6 2549A>del		Probe	RED	INS	ACGGACGGGAGCTGTGCTAGTAGCAGV (SEQ ID NO:449)
CYP2D6 2549A>del		Probe	FAM	DEL	CGCGCCGAGGCTGTGCTAGTAGCAGV (SEQ ID NO:450)
CYP2D6 2549A>del		Target	RED	INS	ATGAGCTGCTAACTGACACAGGATGACCTGGGACCCAGCCAGCCC (SEQ ID NO:451)
CYP2D6 2549A>del		Target	FAM	DEL	ATGAGCTGCTAACTGACACAGGATGACCTGGGACCCAGCCAGCCC (SEQ ID NO:452)
CYP2D6 1707T>del		Invader	NONE		CAGCGGCCCTCCTCGGTACCT (SEQ ID NO:453)
CYP2D6 1707T>del		Probe	FAM	INS	CGCGCCGAGGCACTGCTCCAGCAV (SEQ ID NO:454)
CYP2D6 1707T>del		Probe	RED	DEL	ACGGACGGGAGGCTGTCTCCAGCAV (SEQ ID NO:455)
CYP2D6 1707T>del		Target	FAM	INS	AGAACTGCTGGAGCAGTGGGTGACCGAGGGGCTGCC (SEQ ID NO:456)
CYP2D6 1707T>del		Target	RED	DEL	AGAACTGCTGGAGCAGGGGTGACCGAGGGGCTGCC (SEQ ID NO:457)



## "Replacement Sheet"

**FIGURE 15**

SNP Name	Nucleotide position/ change	Oligo Type	Dye	Poly- morphism	Assay Oligo Sequence
CYP2D6 1039C>T V3	1039C>T	Invader	NONE		CTTGCCCTGGGAACGCGGCCCT (SEQ ID NO:458)
CYP2D6 1039C>T V3	1039C>T	Probe	FAM	C	CGCGCCGAGGGAACCCAGGATCTGGGV (SEQ ID NO:459)
CYP2D6 1039C>T V3	1039C>T	Probe	RED	T	ACGGACGGGAGAAACCCAGGATCTGGGV (SEQ ID NO:460)
CYP2D6 1039C>T V3	1039C>T	Target	FAM	C	TCACCCAGATCCTGGGTTTCGGGCCCGCTTCCCAAGGCAAGCA (SEQ ID NO:461)
CYP2D6 1039C>T V3	1039C>T	Target	RED	T	TCACCCAGATCCTGGGTTTCGGGCCCGCTTCCCAAGGCAAGCA (SEQ ID NO:462)
CYP2D6 R296C V4	2850C>T	Invader	NONE		GGCAGAGAACAGGTCAGCCACCATTATGCT (SEQ ID NO:463)
CYP2D6 R296C V4	2850C>T	Probe	RED	C	ACGGACGGGAGGAGGTTCATCATTTGAAGV (SEQ ID NO:464)
CYP2D6 R296C V4	2850C>T	Probe	FAM	T	CGCGCCGAGGACAGGTTCATCATTTGAAGCV (SEQ ID NO:465)
CYP2D6 R296C V4	2850C>T	Target	RED	C	GCAGCTTCAATGATGAGAACTTCGCATAGTGGTGGCTGACCTGTTCTCTGCCGG (SEQ ID NO:466)
CYP2D6 R296C V4	2850C>T	Target	FAM	T	GCAGCTTCAATGATGAGAACTTCGCATAGTGGTGGCTGACCTGTTCTCTGCCGG (SEQ ID NO:467)
CYP2D6*8 G169X 1/3	1758G>T	Invader	NONE		TGTGCCGCCCTTCGCCRACCACCTcYc (SEQ ID NO:468)
CYP2D6*8 G169X 1/3	1758G>T	Probe	FAM	G	CGCGCCGAGGGGTGGGTGATGGGCV (SEQ ID NO:469)
CYP2D6*8 G169X 1/3	1758G>T	Probe	RED	T	ACGGACGGGAGTGTGGGTGATGGGCV (SEQ ID NO:470)
CYP2D6*8 G169X 1/3	1758G>T	Target	FAM	G	TTCTGCCCATCACCCACCGAGTGGTYGGCGAAGCGGCACAAA (SEQ ID NO:471)
CYP2D6*8 G169X 1/3	1758G>T	Target	RED	T	TTCTGCCCATCACCCACCGAGTGGTYGGCGAAGCGGCACAAA (SEQ ID NO:472)
CYP2D6*14 G169R 1/3	1758G>A	Invader	NONE		TGTGCCGCCCTTCGCCRACCACCTcYt (SEQ ID NO:473)
CYP2D6*14 G169R 1/3	1758G>A	Probe	FAM	G	CGCGCCGAGGGGTGGGTGATGGGCV (SEQ ID NO:474)
CYP2D6*14 G169R 1/3	1758G>A	Probe	RED	A	ACGGACGGGAGAGTGGGTGATGGGCV (SEQ ID NO:475)
CYP2D6*14 G169R 1/3	1758G>A	Target	FAM	G	TTCTGCCCATCACCCACCGAGTGGTYGGCGAAGCGGCACAAA (SEQ ID NO:476)
CYP2D6*14 G169R 1/3	1758G>A	Target	RED	A	TTCTGCCCATCACCCACCGAGTGGTYGGCGAAGCGGCACAAA (SEQ ID NO:477)
CYP2D6 H94R AS	984A>G	Invader	NONE		TGCGCGAGCGMTGGTGACCCT (SEQ ID NO:478)
CYP2D6 H94R AS	984A>G	Probe	FAM	A	CGCGCCGAGGCGGAGGACACcV (SEQ ID NO:479)
CYP2D6 H94R AS	984A>G	Probe	RED	G	ACGGACGGGAGGCGGCGAGGACAcV (SEQ ID NO:480)
CYP2D6 H94R AS	984A>G	Target	FAM	A	TCGGCSGTCTCCTCGCGTGGTGCGCCTCGGCACG (SEQ ID NO:481)
CYP2D6 H94R AS	984A>G	Target	RED	G	TCGGCSGTCTCCTCGCGCGGGTCAcCAKCGCCTCGGCACG (SEQ ID NO:482)
CYP2D6 2539-2542[delAACT]	2539-2542[delAACT]	Invader	NONE		GCTGGTGCCAGGTCATCCGTGCTT (SEQ ID NO:483)
CYP2D6 2539-2542[delAACT]	2539-2542[delAACT]	Invader	NONE		GCTGGTGCCAGGTCATCTGTGCTT (SEQ ID NO:484)
CYP2D6 2539-2542[delAACT]	2539-2542[delAACT]	Probe	FAM	DEL	gctgcgggggCAGCAGCTCATCCAG (SEQ ID NO:485)
CYP2D6 2539-2542[delAACT]	2539-2542[delAACT]	Probe	RED	INS	acgagcgggggCAGTTAGCAGCTCATCC (SEQ ID NO:486)
CYP2D6 2539-2542[delAACT]	2539-2542[delAACT]	Target	FAM	DEL	ACCCAGCTGGATGAGTGTGAGCAGCGATGACCTGGGACCCAGCCC (SEQ ID NO:487)
CYP2D6 2539-2542[delAACT]	2539-2542[delAACT]	Target	FAM	DEL	ACCCAGCTGGATGAGTGTGAGCAGCGATGACCTGGGACCCAGCCC (SEQ ID NO:488)
CYP2D6 2539-2542[delAACT]	2539-2542[delAACT]	Target	RED	INS	ACCCAGCTGGATGAGTGTCTTaactgAGCAGCGATGACCTGGGACCCAGCCC (SEQ ID NO:489)
CYP2D6 2539-2542[delAACT]	2539-2542[delAACT]	Target	RED	INS	ACCCAGCTGGATGAGTGTCTTaactgAGCAGCGATGACCTGGGACCCAGCCC (SEQ ID NO:490)
CYP2D6 2613-2615delAGA	2613-2615delAGA	Invader	NONE		CCACCGTGGCAGCCACTCTCACCC (SEQ ID NO:491)
CYP2D6 2613-2615delAGA	2613-2615delAGA	Probe	FAM	INS	CGCGCCGAGGTTCCATCTCTGCCAV (SEQ ID NO:492)
CYP2D6 2613-2615delAGA	2613-2615delAGA	Probe	RED	DEL	ACGGACGGGAGTCCATCTCTGCCAGV (SEQ ID NO:493)
CYP2D6 2613-2615delAGA	2613-2615delAGA	Target	FAM	INS	GCCTTCTGGCAGAGATGGAGAAAGTGAAGTGGTGCACCGTGGGG (SEQ ID NO:494)
CYP2D6 2613-2615delAGA	2613-2615delAGA	Target	RED	DEL	GCCTTCTGGCAGAGATGGAGGTGAGAGTGGTGCACCGTGGGG (SEQ ID NO:495)
CYP2D6 172-174FRPrep(a) is 12	12	Invader	NONE		CCCCARGACGCCCTTTCCGCTT (SEQ ID NO:496)
CYP2D6 172-174FRPrep(a) is 12	12	Probe	FAM	INS	CGCGCCGAGGTTTCGCCCTTTCGV (SEQ ID NO:497)
CYP2D6 172-174FRPrep(a) is 12	12	Probe	RED	DEL	ACGGACGGGAGCAACGGTCTCTTGGACV (SEQ ID NO:498)
CYP2D6 172-174FRPrep(a) is 12	12	Target	FAM	INS	CTTTGTCCAAGAGACCTTGGGGCGAAAGGGGCGAAAGGGGGTGGGGT (SEQ ID NO:499)
CYP2D6 172-174FRPrep(a) is 12	12	Target	RED	DEL	CTTTGTCCAAGAGACCTTGGGGCGAAAGGGGGCTCTYTGCGGGT (SEQ ID NO:500)
CYP2D6 221C>A as		Invader	NONE		GGAGGGCGGCAGAGGTSCTGAGGT (SEQ ID NO:501)
CYP2D6 221C>A as		Probe	RED	C	ACGGACGGGAGCTCCACCCAGAGCAV (SEQ ID NO:502)
CYP2D6 221C>A as		Probe	FAM	A	CGCGCCGAGGATGCCCAACCAAAV (SEQ ID NO:503)
CYP2D6 221C>A as		Target	RED	C	ATGTTTCTTCTGGTGGGgAGCCTCAGSACCTCTGCGGCCCTCCAG (SEQ ID NO:504)
CYP2D6 221C>A as		Target	FAM	A	ATGTTTCTTCTGGTGGGgATCCTCAGSACCTCTGCGGCCCTCCAG (SEQ ID NO:505)

FIGURE 15

SNP Name	Nucleotide position/ change	Oligo Type	Dye	Poly- morphism	Assay Oligo Sequence
CYP2D6 221C>A s		Invader	NONE		CCACCATCCATGTTTGTCTTCTGGTRGGGSAC (SEQ ID NO:506)
CYP2D6 221C>A s		Probe	FAM	C	CGCGCCGAGGGCCCTCAGACCTCTGV (SEQ ID NO:507)
CYP2D6 221C>A s		Probe	RED	A	ACGGACGGGAGTCTCTCAGACCTCTGV (SEQ ID NO:508)
CYP2D6 221C>A s		Target	FAM	C	GGCGGACAGAGGTCTGAGGCTSCCCYACCAAGCAACATGGATGGTGGGTG (SEQ ID NO:509)
CYP2D6 221C>A s		Target	RED	A	GGCGGACAGAGGTCTGAGGATSCCCYACCAAGCAACATGGATGGTGGGTG (SEQ ID NO:510)
CYP2D6 223C>G as		Invader	NONE		GGAGGGCGGACAGAGGTCTGAGGTTT (SEQ ID NO:511)
CYP2D6 223C>G as		Probe	RED	C	ACGGACGGGAGGCCCTCAGAGCAAcv (SEQ ID NO:512)
CYP2D6 223C>G as		Probe	FAM	G	CGCGCCGAGGGCCCTCAGAGCAAcv (SEQ ID NO:513)
CYP2D6 223C>G as		Target	RED	C	ATGTTTGTCTCTGTaGGGGAGCCTCAGACCTCTGCCGCCCTCCAG (SEQ ID NO:514)
CYP2D6 223C>G as		Target	FAM	G	ATGTTTGTCTCTGTaGGGGAGCCTCAGACCTCTGCCGCCCTCCAG (SEQ ID NO:515)
CYP2D6 223C>G s		Invader (mutant)	NONE		CCACCATGTTTGTCTGGTGGGT (SEQ ID NO:516)
CYP2D6 223C>G s		Invader (wild-type)	NONE		ACCCACCATCCATGTTTGTCTGGTGGGT (SEQ ID NO:517)
CYP2D6 223C>G s		Probe	RED	C	ACGGACGGGAGGAGCCTCAGACCTCV (SEQ ID NO:518)
CYP2D6 223C>G s		Probe	FAM	G	CGCGCCGAGGGCACTCTCAGACCTCTGV (SEQ ID NO:519)
CYP2D6 223C>G s		Target	RED	C	GGCGGACAGAGGTCTGAGGCTCCCCACCAAGCAACATGGATGGTGGGTGA (SEQ ID NO:520)
CYP2D6 223C>G s		Target	FAM	G	GGCGGACAGAGGTCTGAGGATGCCCTCAGAGCAACATGGATGGTGGGTGA (SEQ ID NO:521)
Copy Number Designs	Gene	Oligo	Sequence		
E	2D6	2D6 Invader	CCCGGGCCACCCACACTGAGCC (SEQ ID NO:522)		
E	Alpha Actin	Alpha Actin Invader	AGGAGTAGCCACGCTCGGTGAGGATCTTATT (SEQ ID NO:523)		
E	2D6	Probe Arm3 2D6	ACGGACGGGAGTTACAGCAGAGGTGC (SEQ ID NO:524)		
E	Alpha Actin	Probe Arm1 Alpha Actin	CGCGCCGAGGAGGTAGTCGGTGAGATC (SEQ ID NO:525)		
E	2D6	Synthetic Target Alpha Act	GGACCGCACCTGTGCTGTAAgCTCAGTGGGTGGCGGGGGC (SEQ ID NO:526)		
E	Alpha Actin	Synthetic Target 2D6	CGCGATCTCACCGACTACTGAATGAAGATCCTCACCAGCGTGGCTACTCTTC (SEQ ID NO:527)		

FRET SEQUENCES  
SEQ ID 242 (FRET probe FAM): Y-1ct-X-agg-cgg-ttt-tcc-ggc-tga-gac-ctc-ggc-gcg-hex  
SEQ ID 243 (FRET probe RED): Y-1ct-X-agg-cgg-ttt-tcc-ggc-tga-gac-tcc-gcg-tcc-gt-hex